Plasmid-Mediated CTX-M-5 ß-lactamase Conferring Resistance to Ceftriaxone and Cefotaxime in a *Salmonella* serotype Typhimurium var. Copenhagen Isolate from an Infant Adopted from Russia

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Salmonella serotype Typhimurium var. Copenhagen isolate G10914, was isolated in the United States from an adopted infant from Krasnidor, Russia. This isolate was previously reported to be resistant to extended-spectrum cephalosporin antibiotics. Isolates resistant to extended-spectrum cephalosporin antibiotics pose a risk to public health due to the increased risk of treatment failure among infected patients. We examined isolate G10914 at the molecular level to determine the mechanism of cephalosporin resistance.

Isoelectric focusing results revealed the production of a ß-lactamase enzyme with a pI of 8.3 in parent and *Escherichia coli* DH5-a transconjugants. PCR products of ß-lactamase genes were sequenced directly and showed a CTX-M-5 ß-lactamase gene. We demonstrated by Southern blot that the CTX-M-5 gene resided on a plasmid of approximately 9 kb. When aligned with the promoter sequences of Toho-1 and CTX-M-4, the G10914 CTX-M-5 upstream sequence appeared to have suffered a 30-bp deletion, which included the -10 promoter sequence. Both the parent and transconjugant strains were resistant to ceftriaxone and cefotaxime. Isolate G10914 showed intermediate resistance to ceftazidime. The *E. coli* DH5a transconjugant of G10914 was fully resistant to ceftazidime; this is in contrast to previous reports that did not indicate the presence of a CTX-M-5 gene that could confer complete resistance to this antibiotic. To our knowledge, this is the first *Salmonella* isolate resistant to extended-spectrum cephalosporins carrying a CTX-M-5 gene to have been isolated in the United States.

Suggested citation:

Zirnstein GW, Swaminathan B, Angulo F, Tenover F, Rasheed J. Plasmid-Mediated CTX-M-5 b-lactamase Conferring Resistance to Ceftriaxone and Cefotaxime in a *Salmonella* serotype Typhimurium var. Copenhagen Isolate from an Infant Adopted from Russia. 2nd International Conference on Emerging Infectious Diseases. Atlanta, GA, July 2000.